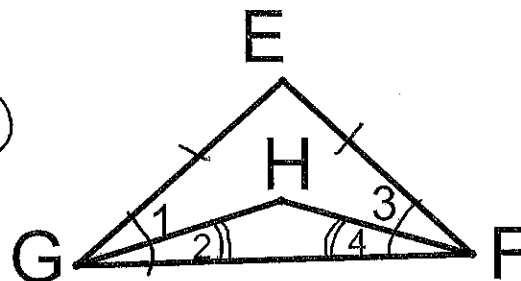


Proof #1

Given:  $\overline{GE} \cong \overline{FE}$ ;  $\angle 2 \cong \angle 4$  (do not sketch  $\overline{EH}$ )

Prove:  $\angle 1 \cong \angle 3$



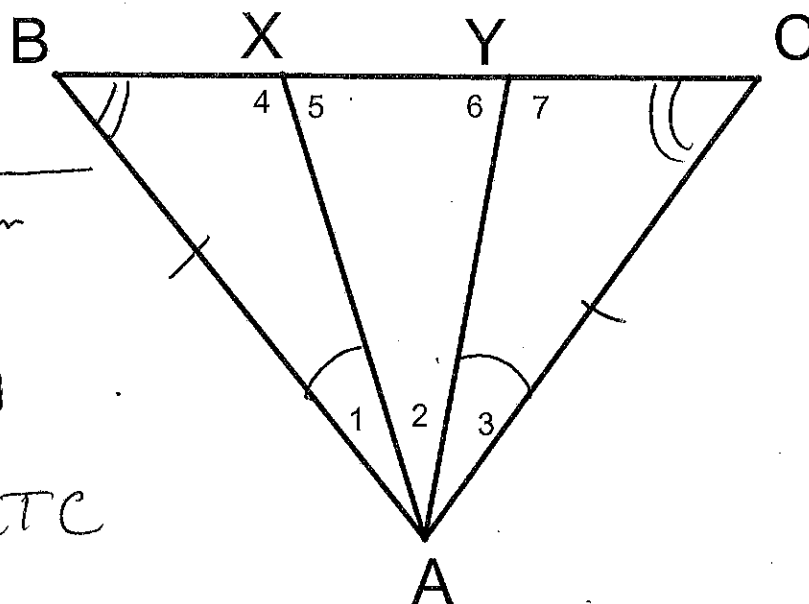
S	R
① ~	① Given
② $\angle EGF \cong \angle EFG$	② BAT
③ $m\angle EGF \cong m\angle EFG$ $m\angle 2 = m\angle 4$	③ def $\cong$
④ $m\angle EGF = m\angle 1 + m\angle 2$ $m\angle EFG = m\angle 3 + m\angle 4$	④ AAP
⑤ $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	⑤ Subst

⑥ $m\angle 1 = m\angle 3$	⑥ Subtr
⑦ $\angle 1 \cong \angle 3$	⑦ def $\cong$

Proof #2

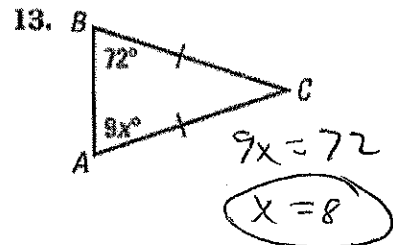
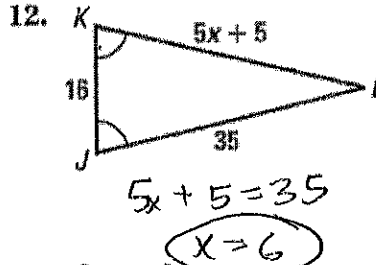
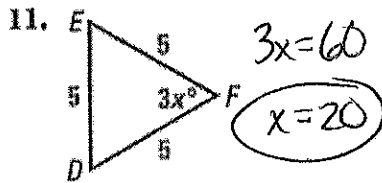
Given:  $\overline{AB} \cong \overline{AC}$ ;  $\angle 1 \cong \angle 3$

Prove:  $\overline{AX} \cong \overline{AY}$

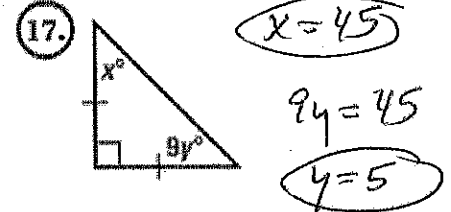
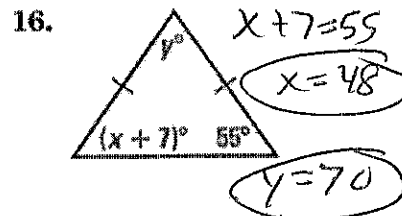
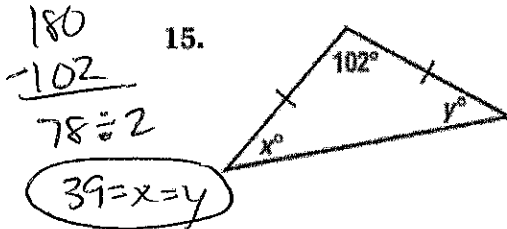


S	R
① ~	① Given
② $\angle B \cong \angle C$	② BAT
③ $\triangle ABX \cong \triangle ACY$	③ ASA
④ $\overline{AX} \cong \overline{AY}$	④ CPCTC

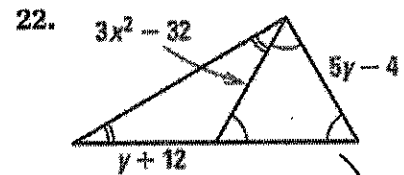
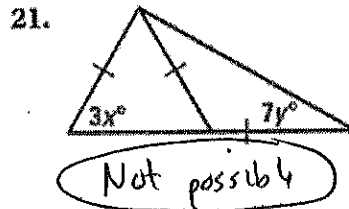
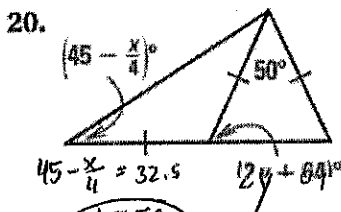
**ALGEBRA** Find the value of  $x$ .



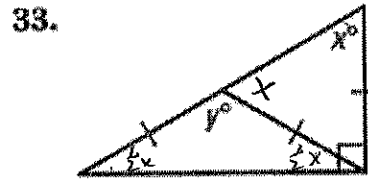
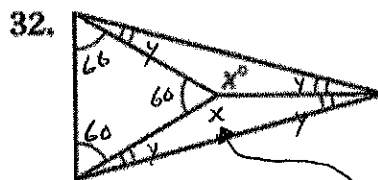
**ALGEBRA** Find the values of  $x$  and  $y$ .



**ALGEBRA** Find the values of  $x$  and  $y$ , if possible. Explain your reasoning.



**ALGEBRA** Find the value(s) of the variable(s). Explain your reasoning.



$x + 2y = 180$   
 $2\Delta \cong \text{AAS}$   
so all in  $x$   
then  
 $2x + 60 = 360$   
 $2x = 300$   
 $x = 150$

$x + y = 180$   
 $x + \frac{1}{2}x = 90$   
 $\frac{1}{2}x = 90$   
 $x = 60$   
 $y = 120$

\* Challenge  
Use B.A.T + Ext  $\angle$  thm  
+ L.P.P.

#22  
 $y + 12 = 3x^2 - 32 = 5y - 4$   
 $y + 12 = 5y - 4$   
 $16 = 4y$   
 $4 = y$   
 $16 = 3x^2 - 32$   
 $48 = 3x^2$   
 $16 = x^2$   
 $\pm 4 = x$